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EXAMINER

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ART UNIT	PAPER NUMBER
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2686

DATE MAILED: 03/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/725,661

Applicant(s)

SEGAL ET AL.

Examiner

Olivia Marsh

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 11 March 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-32 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. **Claims 1-2, 12-13, and 25-26** are rejected under 35 U.S.C. 102(b) as being anticipated by Buttitta *et al.* (U.S. 5,913,166).

Regarding **claim 1**, Buttitta discloses a mobile station (MS) 10, reading on claimed “wireless communication unit,” a public/cellular base station (CBS) 13, reading on claimed “second communication network,” and a private base station (PBS) 20, reading on claimed “first communication network,” in Figure 1 (column 2, lines 66-67; column 3, lines 1-8). As shown in Figure 1, CBS 13 and PBS 20 are connected via PSTN 14, LEC 11, and MSC 12, reading on claimed “a loosely coupled communication network comprising a first communication network and a second communication network.” Buttitta also discloses the invention relates to radio telephones operative with a private base station and public base stations in a wireless system. It is inherent that the mobile station (MS) 10 comprises a transceiver configured to support an air interface with private base station and the public base station in order to be operative within these networks. Buttitta also discloses the handoff process for a mobile station (MS) 10 roaming from PBS 20 to CBS 13 [Examiner's notations in italics]:

[Column 7, lines 40-67; column 8, lines 1-4]

1) From an active call the user presses a feature code (e.g. #T). This sends to the PBS a hand-off trigger. *It is inherent that the mobile station 10 would possess a controller*

*arranged to control and cooperatively operate with the transceiver in order to communicate any data to the PBS 20.*

1a) The PBS detects low signal strength from the MS and sends to the MS hand-off warning tones, after which the PBS proceeds with the following process.

2) The PBS sends a switch-hook flash to the LEC.

3) The LEC places the other party on hold and returns a dial tone to the PBS. *Reading on claimed "a controller arranged to control and cooperatively operate with the transceiver to place an active call on hold to provide an on hold call at the first communication network."*

4) The PBS sends a deregistration message to the MS.

5) The MS ceases communications with the PBS and releases its channel.

6) The MS selects and registers with the public cellular system. The registration with the public system will automatically update the MS's Temporary Listed Directory Number (TLDN) with the corresponding HLR/VLR.

7) The public cellular system accepts the MS registration.

8) After step 4, the PBS sends a call park feature code in order to invoke the call park feature and optionally a PIN at the LEC.

9) The LEC places the other party on hold into the parked state.

10) The MS dials the call park feature access number over the cellular network. *Reading on claimed "retrieve the on hold call from the first communication network while the wireless communication unit is operating in the second communication network."*

11) The cellular network routes the call park feature access number to the LEC. *Reading on claimed "call leg."*

12) The LEC connects the parked party and the call from the MS.

13) The call with parked party is established with MS through cellular network.

*Steps 11-13, reading on claimed "via a call leg established for coupling the on-hold call to the wireless communication unit."*

Regarding claim 2, Buttitta discloses everything as applied in claim 1 and further discloses if the user still continues to move further out of the private base station coverage area and the private base station is suitably configured, the user dials a feature code to start execution of the mobile station hand of process (column 7, lines 18-24), reading on claimed "the

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controller cooperatively with the transceiver is operable to determine that a handout from the first communication network to the second communication network is desired." Buttitta also discloses, as previously stated, [Examiner notations in italics]:

10) The MS dials the call park feature access number, *reading on claimed "handout number,"* over the cellular network. *Reading on claimed "proactively establish the call leg by initiating the call and connecting to the call through calling, via the second communication network, a handout number."*

11) The cellular network routes the call park feature access number to the LEC. *Reading on claimed "a handout number that terminates in the first communication network."*

12) The LEC connects the parked party and the call from the MS.

13) The call with parked party is established with MS through cellular network. *Reading on claimed "thereby resulting in the on hold call being connected to the call."*

Regarding claim 12, Buttitta discloses the private base station 20 and the local exchange carrier switch 11, *reading on claimed "communication network switch,"* cooperatively switch a call in progress from an existing wireless communication path established between private base station 20, *reading on claimed "first communication network,"* and the mobile station 10 to a newly created wireless communication path established between public base station 13, *reading on claimed "second communication network,"* in the cellular system and the mobile station 10 (column 3, lines 37-44), *reading on claimed "a switching function operable to couple the first communication network to a second communication network."* It is inherent that the LEC switch 11 comprises a switching function in order to couple the private system to the cellular system. Buttitta also discloses in Figure 1 the cellular base station 13, serving the cellular system, is coupled to the private base station 20, serving the private system, via LEC 11, PSTN 14, and MSC 12, *reading on claimed "the first communication network and the second communication network comprise a loosely coupled communication network."* Buttitta also discloses the handoff process for a mobile station (MS) 10 roaming from PBS 20 to CBS 13 [Examiner's notations in italics]:

[Column 7, lines 40-67; column 8, lines 1-4]

1) From an active call the user presses a feature code (e.g. #T), *reading on claimed "signal from a communication unit."* This sends to the PBS a hand-off trigger.

1a) The PBS detects low signal strength from the MS and sends to the MS hand-off warning tones, after which the PBS proceeds with the following process.

2) The PBS sends a switch-hook flash to the LEC.

3) The LEC places the other party on hold and returns a dial tone to the PBS. *Reading on claimed "a controller arranged to control and cooperatively operate with the switching function to place an active call on hold responsive to a signal from a communication unit to provide an on hold call at the first communication network." It is inherent the LEC switch 11 comprises a controller control the operations of the switch.*

4) The PBS sends a deregistration message to the MS.

5) The MS ceases communications with the PBS and releases its channel.

6) The MS selects and registers with the public cellular system. The registration with the public system will automatically update the MS's Temporary Listed Directory Number (TLDN) with the corresponding HLR/VLR.

7) The public cellular system accepts the MS registration.

*Steps 4-7, reading on claimed "handout of the wireless communication unit."*

8) After step 4, the PBS sends a call park feature code in order to invoke the call park feature and optionally a PIN at the LEC.

9) The LEC places the other party on hold into the parked state.

10) The MS dials the call park feature access number over the cellular network."

11) The cellular network routes the call park feature access number to the LEC. *Reading on claimed "call leg."*

12) The LEC connects the parked party and the call from the MS.

13) The call with parked party is established with MS through cellular network.

*Steps 10-13, reading on claimed "couple, via a call leg to the second communication network, the on hold call to the wireless communication unit, the call leg established for coupling the on-hold call to the wireless communication unit after a handout of the*

*wireless communication unit and while the wireless communication unit is operating in the second communication network.*

Regarding claim 13, Buttitta discloses everything as applied in claim 12 and further discloses if the user still continues to move further out of the private base station coverage area and the private base station is suitably configured, the user dials a feature code to start execution of the mobile station hand off process (column 7, lines 18-24) and once the handoff is initiated in the private base station 20 by the user of the mobile station 10 the process is executed in which the private base station and the local exchange carrier switch 11 collectively switch the call in progress from an existing wireless communications path established between the private base station and the mobile station to a newly created wireless communications path established between the cellular base station 13 and the mobile station 10, reading on claimed "the controller cooperatively with the switching function and responsive to determining that a handout from the first communication network to the second communication network is desired." Buttitta also discloses, as previously stated, [Examiner notations in italics]:

10) The MS dials the call park feature access number, *reading on claimed "handout number,"* over the cellular network. *Reading on claimed "passively establish the call leg by receiving a call from the wireless communication unit via the second communication network that is directed to a handout number."*

11) The cellular network routes the call park feature access number to the LEC. *Reading on claimed "call leg."*

12) The LEC connects the parked party and the call from the MS.

13) The call with parked party is established with MS through cellular network.

*Steps 11-13, reading on claimed "responsive to receiving the call, connecting a peer call leg of the on hold call to the call leg as an active call."*

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Regarding claim 25, Buttitta discloses the private base station 20 and the local exchange carrier switch 11, reading on claimed "communication network switch," cooperatively switch a call in progress from an existing wireless communication path established between private base station 20, reading on claimed "first communication network," and the mobile station 10 to a newly created wireless communication path established between public base station 13, reading on claimed "second communication network," in the cellular system and the mobile station 10 (column 3, lines 37-44), reading on claimed "a communication network switch for routing calls to a wireless communication unit operating in a second communication network." Buttitta also discloses in Figure 1 the cellular base station 13, serving the cellular system, is coupled to the private base station 20, serving the private system, via LEC 11, PSTN 14, and MSC 12, reading on claimed "a first and the second communication network comprising a loosely coupled communication network." Buttitta further discloses the handoff process for a mobile station (MS) 10 roaming from PBS 20 to CBS 13 [Examiner's notations in italics]:

[Column 7, lines 40-67; column 8, lines 1-4]

1) From an active call the user presses a feature code (e.g. #T), *reading on claimed "signal from a communication unit."* This sends to the PBS a hand-off trigger.

1a) The PBS detects low signal strength from the MS and sends to the MS hand-off warning tones, after which the PBS proceeds with the following process.

2) The PBS sends a switch-hook flash to the LEC.

3) The LEC places the other party on hold and returns a dial tone to the PBS. *Reading on claimed "placing an active call on hold responsive to a signal from a communication unit to provide an on hold call at the first communication network."*

4) The PBS sends a deregistration message to the MS.

5) The MS ceases communications with the PBS and releases its channel.

6) The MS selects and registers with the public cellular system. The registration with the public system will automatically update the MS's Temporary Listed Directory Number (TLDN) with the corresponding HLR/VLR.

7) The public cellular system accepts the MS registration.



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*Steps 4-7 reading on claimed "handout of the wireless communication unit."*

8) After step 4, the PBS sends a call park feature code in order to invoke the call park feature and optionally a PIN at the LEC.

9) The LEC places the other party on hold into the parked state.

10) The MS dials the call park feature access number over the cellular network.

11) The cellular network routes the call park feature access number to the LEC. *Reading on claimed "establishing a call leg for coupling the on hold call from the first communication network to the second communication network."*

12) The LEC connects the parked party and the call from the MS.

13) The call with parked party is established with MS through cellular network.

*Steps 10-13, reading on claimed "coupling the on hold call, via the call leg, to the wireless communication unit, after a handout of the wireless communication unit and while the wireless communication unit is operating in the second communication network."*

Regarding claim 26, Buttitta discloses everything as applied in claim 25 and further discloses if the user still continues to move further out of the private base station coverage area and the private base station is suitably configured, the user dials a feature code to start execution of the mobile station hand off process (column 7, lines 18-24) and once the handoff is initiated in the private base station 20 by the user of the mobile station 10 the process is executed in which the private base station and the local exchange carrier switch 11 collectively switch the call in progress from an existing wireless communications path established between the private base station and the mobile station to a newly created wireless communications path established between the cellular base station 13 and the mobile station 10, reading on claimed "determining that a handout from the first communication network to the second communication network and establishing a call leg responsive to the determining." Buttitta also discloses, as previously stated, [Examiner notations in italics]:

10) The MS dials the call park feature access number, *reading on claimed "handout number,"* over the cellular network. *Reading on claimed "passively establish the call leg*

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*by receiving a call from the wireless communication unit via the second communication network that is directed to a handout number."*

11) The cellular network routes the call park feature access number to the LEC. *Reading on claimed "call leg."*

12) The LEC connects the parked party and the call from the MS.

13) The call with parked party is established with MS through cellular network.

*Steps 11-13, reading on claimed "responsive to receiving the call, connecting a peer call leg of the on hold call to the call leg as an active call."*

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claims 3-11, 14-18, and 27-31** are rejected under 35 U.S.C. 103(a) as being unpatentable over Buttitta as applied to claims 1, 12, and 25 above, and further in view of Kung *et al* (U.S. 6,633,635 B2).

As to **claim 3**, Buttitta discloses everything as applied in claims 1 and 2; however, he fails to disclose the controller distinguishes the call from other calls within the second communication network by comparing call information to expected call information.

In an analogous art, Kung teaches a subscriber to a call waiting service can have multiple calls waiting on a call queue while involved in another call to enable the subscriber to have three or more incoming calls active simultaneously and switch between the different calls (column 30, lines 22-28), reading on claimed "other calls within the second communication network." Kung also teaches a visual list may be provided to the subscriber (column 32, lines 38-39) and that data such as waiting time and the type of service of the waiting call (column 32, lines 42-44), reading on claimed "call information," and if the service is a data type, the subscriber may be notified of the expected duration of the transmission (column 32, lines 44-45), reading on claimed "controller distinguishes the call from other calls within the second communication network by comparing call information to expected call information."

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to require the wireless communication unit and the controller, disclosed by Buttitta, to

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distinguish the call from other calls within the second communication network by comparing call information to expected call information, to provide the mobile user a visual indication of the type of service the call on hold is.

As to **claim 4**, Buttitta discloses everything as applied in claims 1 and 2; however, he fails to disclose the on hold call is one of a plurality of on hold calls and the controller orders local on hold call information corresponding to the plurality of on hold calls according to an order for connecting the plurality of on hold calls to the call.

Kung also teaches a subscriber to a call waiting service can have multiple calls waiting on a call queue while involved in another call to enable the subscriber to have three or more incoming calls active simultaneously and switch between the different calls (column 30, lines 22-28), reading on claimed "the on hold call is one of a plurality of on hold calls." Kung also teaches a call manager 218 or the broadband residential gateway 300 may maintain a queue of waiting calls, reading on claimed "local on hold call information," so that the call waiting the longest may be answered in the ordered received (column 32, lines 31-34), reading on claimed "the controller orders local on hold call information corresponding to the plurality of on hold calls according to an order for connecting the plurality of on hold calls to the call.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to require the wireless communication device and the on hold call, disclosed by Buttitta, to be one of a plurality of on hold calls and the controller orders local on hold call information corresponding to the plurality of on hold calls according to an order for connecting the plurality of on hold calls to the call, as taught by Kung, to provide the user with the capability of choosing which call placed on hold to connect to first.

As to **claim 5**, Buttitta discloses everything as applied in claims 1-2 and the combination of Buttitta and Kung teaches everything as applied in claim 4; however, Buttitta fails to disclose

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the controller orders the local on hold call information according to an on hold time for each of the plurality of on hold calls.

Kung also teaches a visual list may be provided to the subscriber (column 32, lines 38-39) and that data such as waiting time, reading as claimed "on hold time," and the type of service of the waiting call (column 32, lines 42-44), reading on claimed "controller orders the local on hold call information according to an on hold time for each of the plurality of on hold calls."

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to require the wireless communication device and on hold call, disclosed by Buttitta, to be one of a plurality of on hold calls and the controller orders local on hold call information corresponding to the plurality of on hold calls according to an order for connecting the plurality of on hold calls to the call, taught by Kung, and the controller orders the local on hold call information according to an on hold time for each of the plurality of on hold calls, also taught by Kung, to enable the user to connect the on hold call that has been on hold the longest first.

As to claim 6, Buttitta discloses everything as applied in claims 1-2 and he further discloses, in a second protocol, the PBS 20 dials the mobile identification number (MIN) of the MS to place a call to the MS through the cellular network, the cellular network routes the call to the MS and pages the MS, the user at the MS receives the page alert signal and the user of the MS answers and the call is established (column 8, lines 65-67; column 9, lines 1-15), reading on claimed "a user interface and wherein, responsive to an indication from the user interface, the controller cooperatively with the transceiver connects the call." It is inherent that the MS comprises a user interface in order for the user to receive the page alert signal and to respond to such signal.

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However, Buttitta fails to disclose the user interface provide updated information for the on hold call corresponding to the call.

Kung also teaches the CM 218 and the BRG 300 of the subscriber during the call waiting process; multiple incoming calls to a subscriber may be placed on hold as waiting calls (column 32, lines 28-31). Kung also teaches the identification information, reading on claimed "on hold information for the on hold call," may be sent by the CM 218 to the BRG 300 so that the subscriber may be advised as to the origin of the calls, and can select which call in the queue to switch to from the ongoing call and the subscriber may view the queue of waiting calls and select the desired call from the queue and switch between calls (column 32, lines 34-41), reading on claimed "the user interface provides updated information for the on hold call corresponding to the call."

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to require the wireless communication device, disclosed by Buttitta, to comprise a user interface and wherein, responsive to an indication from the user interface, the controller cooperatively with the transceiver connects the call, also disclosed by Buttitta, and the user interface provides updated information for the on hold call corresponding to the call, as taught by Kung, to provide the mobile user information pertaining the characteristics of the call placed on hold concerning wait time and type of service.

As to **claim 7**, Buttitta discloses everything as applied in claims 1-2; however, he fails to teach the controller cooperatively with the transceiver places the call on hold at the second communication network by sending hold information corresponding to the call to the second communication network.

Kung also teaches the when a subscriber is engaged in an ongoing call with a party who is either on the same network as the subscriber or off the network, the BRG assigned to the

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subscriber can receive packets for an incoming call originating from a party either on or off the same network as the subscriber (column 30, lines 35-40). He further teaches the BRG 300 notifies the subscriber of the incoming call (column 30, lines 66-67) and if the subscriber chooses to answer the incoming call and place the ongoing call on the queue, the BRG 300 can communicate this information to the CM 218 and the resources for the incoming call can be allocated and that call connected to the subscriber in step S760, while the ongoing-call is no longer ongoing and placed on the call queue (column 31, lines 33-39), reading on claimed "places the call on hold at the second communication network by sending hold information corresponding to the call to the second communication network."

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to require the wireless communication device and on hold call, disclosed by Buttitta, to place the call on hold at the second communication network by sending hold information corresponding to the call to the second communication network, as taught by Kung, to enable the user to initiate a new communication or to receive a new communication in the current serving network.

As to claim 8, Buttitta discloses everything as applied in claims 1-2 and the combination of Buttitta and Kung teaches everything as applied in claim 7 and Buttitta also discloses the cellular user is provided with a visual notification in the mobile station 10 when the station is registered with the private base station 20 in the private wireless system (column 5, lines 33-36). It is inherent that the mobile station 10 comprises a user interface in order for the cellular user to receive the visual notification. Buttitta also discloses the private base station 20 is configurable to automatically execute the hand off when the mobile station 10 is moved to the fringe of the coverage area provided by private base station 20 (column 3, lines 48-51), reading on claimed "wherein the establishment of the call leg and the sending hold information

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corresponding to the call are done automatically.” However, Buttitta does not disclose a user interface maintains on hold information for the on hold call, the on hold call now corresponding to the call that is placed on hold at the second communication network.

Kung also teaches identification information, reading on claimed “on hold information for the on hold call,” may be sent by the CM 218 to the BRG 300 so that the subscriber may be advised as to the origin of the calls, and can select which call in the queue to switch to from the ongoing call and the subscriber may view the queue of waiting calls, reading on claimed “on hold call,” and select the desired call from the queue and switch between calls (column 32, lines 34-41), reading on claimed “the user interface maintains on hold information for the on hold call, the on hold call now corresponding to the call that is placed on hold at the second communication network.”

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to require the wireless communication device, and on hold call, as disclosed by Buttitta, to place the call on hold at the second communication network by sending hold information corresponding to the call to the second communication network, as taught by Kung, the user interface and establishment of the call leg and the sending hold information corresponding to the call are done automatically, also disclosed by Buttitta, and the user interface to maintain on hold information for the on hold call, the on hold call now corresponding to the call that is placed on hold at the second communication network, also taught by Kung, to inform the user of the wireless device the characteristics of the call placed on hold.

As to **claim 9**, Buttitta discloses everything as applied in claims 1-2 and the combination of Buttitta and Kung teaches everything as applied in claim 7; however, Buttitta fails to disclose after placing the call on hold at the second communication network, facilitates establishment of an outer call leg by connecting to an other call with the first communication network via the



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second communication network that corresponds to an other on hold call placed on hold at the first communication network and places the other call on hold at the second communication network by sending hold information corresponding to the other call to the second communication network.

Kung also teaches the BRG 300 monitors whether the subscriber wants to connect to an incoming call or a call waiting on the queue, reading on claimed "an other on hold call," at Step S750. In response to an indication from the subscriber that he is ready to be connected to a call on the queue, the BRG 300 sends a set up request message to the CM 218, the necessary resources for the call are allocated, reading on claimed "after placing the call on hold at the second communication network, facilitates establishment of an other call leg," and the call is then connected in step S760, reading on claimed "by connecting to an other call with the first communication network via the second network that corresponds to an other on hold call placed on hold at the first communication network." The subscriber can switch from an active call to a waiting call at any time as in this manner. [Column 32, lines 19-26] Kung further teaches none or almost no bandwidth is consumed between the CM 218 and the BRG 300 of the subscriber during the call waiting process, which enables multiple incoming calls to a subscriber may be placed on hold as waiting calls and the CM 218 or the BRG 300 may maintain a queue of these waiting calls (column 32, lines 28-31), reading on claimed "places the other call on hold at the second communication network by sending hold information corresponding to the other call to the second communication network."

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to require the wireless communication device, disclosed by Buttitta, to place the call on hold at the second communication network by sending hold information corresponding to the call to the second communication network, as taught by Kung, and after placing the call on hold

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at the second communication network, facilitates establishment of an outer call leg by connecting to an other call with the first communication network via the second communication network that corresponds to an other on hold call placed on hold at the first communication network and places the other call on hold at the second communication network by sending hold information corresponding to the other call to the second communication network, also taught by Kung, to enable the wireless user to choose which calls placed on hold to activate and communicate with the user on hold.

As to claim 10, Buttitta discloses everything as applied in claims 1-2 and the combination of Buttitta and Kung teaches everything as applied in claims 7 and 9; however, Buttitta fails to disclose placing the call on hold at the second communication network, facilitates establishment of an other call leg by connecting to an other call with the first communication network via the second communication network that corresponds to an other active call at the first communication network.

Kung also teaches the BRG 300 monitors whether the subscriber wants to connect to an incoming call, reading on claimed "active call at the first communication network," or a call waiting on the queue at Step S750. In response to an indication from the subscriber that he is ready to be connected to a call on the queue, the BRG 300 sends a set up request message to the CM 218, the necessary resources for the call are allocated, reading on claimed "after placing the call on hold at the second communication network, facilitates establishment of an other call leg," and the call is then connected in step S760, reading on claimed "by connecting to an other call with the first communication network via the second network that corresponds to an other active call placed on hold at the first communication network." The subscriber can switch from an active call to a waiting call at any time as in this manner. [Column 32, lines 19-26]

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Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to require the wireless communication device, disclosed by Buttitta, to place the call on hold at the second communication network by sending hold information corresponding to the call to the second communication network, as taught by Kung, and after placing the call on hold at the second communication network, facilitates establishment of an outer call leg by connecting to an other call with the first communication network via the second communication network that corresponds to an other on hold call placed on hold at the first communication network and places the other call on hold at the second communication network by sending hold information corresponding to the other call to the second communication network, taught by Kung, and to facilitate the establishment of an other call leg by connecting to an other call with the first communication network via the second communication network that corresponds to an other active call at the first communication network, also taught by Kung, to enable the mobile user to receive an incoming call by placing the current call on hold with the other multiple on hold calls to retrieve at a later time.

As to **claim 11**, Buttitta discloses everything as applied in claim 1 and further discloses if the user still continues to move further out of the private base station coverage area and the private base station is suitably configured, an impending hand-off tone is sent to the user from the private base station and the mobile station handoff is executed (column 7, lines 18-24), reading on claimed "the controller cooperatively with the transceiver is operable to determine that a handout from the first communication network to the second communication network is desired and responsive thereto, automatically." Buttitta also discloses, as previously stated, [Examiner notations in italics]:

10) The MS dials the call park feature access number, *reading on claimed "calling number,"* over the cellular network. *Reading on claimed "establish the call leg by initiating and connecting to a call through call a number."*

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11) The cellular network routes the call park feature access number to the LEC. *Reading on claimed "a handout number that terminates in the first communication network."*

12) The LEC connects the parked party and the call from the MS.

13) The call with parked party is established with MS through cellular network.

*Steps 10-13, reading on claimed "take the on hold call of hold at the first communication network by sending hold information to the first communication network to provide a corresponding active call and being connected to the call."*

However, Buttitta fails to disclose while maintaining the on hold information for the on hold call at the user interface to place the call on hold at the second communication network by sending hold information corresponding to the call to the second communication network.

Kung also teaches the when a subscriber is engaged in an ongoing call with a party who is either on the same network as the subscriber or off the network, the BRG assigned to the subscriber can receive packets for an incoming call originating from a party either on or off the same network as the subscriber (column 30, lines 35-40). He further teaches the BRG 300 notifies the subscriber of the incoming call (column 30, lines 66-67) and if the subscriber chooses to answer the incoming call and place the ongoing call on the queue, the BRG 300 can communicate this information to the CM 218 and the resources for the incoming call can be allocated and that call connected to the subscriber in step S760, while the ongoing-call is no longer ongoing and placed on the call queue (column 31, lines 33-39), reading on claimed "places the call on hold at the second communication network by sending hold information corresponding to the call to the second communication network." Kung further teaches identification information, reading on claimed "on hold information for the on hold call," may be sent by the CM 218 to the BRG 300 so that the subscriber may be advised as to the origin of the calls, and can select which call in the queue to switch to from the ongoing call and the subscriber may view the queue of waiting calls, reading on claimed "on hold call," and select the

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desired call from the queue and switch between calls (column 32, lines 34-41), reading on claimed "while maintaining the on hold information for the on hold call at the user interface."

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to require the wireless communication device, disclosed by Buttitta, and to determine that a handout from the first communication network to the second communication network is desired and responsive thereto, automatically, to take the on hold call off of hold at the first communication network by sending hold information to the first communication network to provide a corresponding active call and to establish the call leg by initiating and connecting to a call through calling a number that results in the on hold call that is taken off of hold at the first communication network being connected to the call, also disclosed by Buttitta, to place the call on hold at the second communication network by sending hold information corresponding to the call to the second communication network while maintaining the on hold information for the on hold call at the user interface, as taught by Kung, to enable the user to initiate a new communication or to receive a new communication in the current serving network to inform the user of the wireless device the characteristics of the call placed on hold.

As to **claim 14**, Buttitta discloses everything as applied in claims 12-13; however, he does not disclose to hand out an active call for the wireless communication unit at the first network by establishing an other call leg by forwarding, via the second communications network, the active call for the wireless communication unit after the on hold call has been forwarded and responsive to the on hold call being connected by the wireless communication unit.

Kung also teaches if the subscriber chooses to answer the incoming call, reading on claimed "active call," and place the ongoing call on queue, the BRG 300 can communicate this information to the CM 218 and the resources for the incoming call can be allocated, reading on

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claimed "an other call leg," and that call connected to the subscriber while the on going call is no longer ongoing and placed on the call queue (column 31, lines 33-39), reading on claimed "to hand out an active call for the wireless communication unit at the first network by establishing an other call leg by forwarding, via the second communications network, the active call for the wireless communication unit after the on hold call has been forwarded and responsive to the on hold call being connected by the wireless communication unit."

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to require the communication network switch, disclosed by Buttitta, to hand out an active call for the wireless communication unit at the first network by establishing an other call leg by forwarding, via the second communications network, the active call for the wireless communication unit after the on hold call has been forwarded and responsive to the on hold call being connected by the wireless communication unit, as taught by Kung, to enable the mobile user to respond to calls directed to the mobile user's previous location while the mobile user is operating in a new network.

As to **claim 15**, Buttitta discloses everything as applied in claims 12-13 and also discloses, as stated previously, in order to obtain a call within the private system served by PBS 20 while CBS 13 is serving the MS:

10) The MS dials the call park feature access number; *reading on claimed "an other handout number" and "other call,"* over the cellular network.

11) The cellular network routes the call park feature access number to the LEC. *Reading on claimed "other call leg."*

12) The LEC connects the parked party and the call from the MS.

13) The call with parked party is established with MS through cellular network.

However, Buttitta fails to disclose to hand out an active call for the communication unit at the first network after the coupling of the on hold call to the wireless communication unit by

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establishing another call leg by receiving an other call from the wireless communication unit via the second communication network that is directed to an other handout number and responsive to receiving the other call, connecting the active call to the other call leg.

Kung also teaches if the subscriber chooses to answer the incoming call, reading on claimed "active call," and place the ongoing call on queue, the BRG 300 can communicate this information to the CM 218 and the resources for the incoming call can be allocated, reading on claimed "an other call leg," and that call connected to the subscriber while the on going call is no longer ongoing and placed on the call queue (column 31, lines 33-39), reading on claimed "to hand out an active call for the communication unit at the first network after the coupling of the on hold call to the wireless communication unit by establishing another call leg by receiving an other call from the wireless communication unit via the second communication network that is directed to an other handout number and responsive to receiving the other call, connecting the active call to the other call leg."

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to require the communication network switch, disclosed by Buttitta, an other handout number, also disclosed by Buttitta, to hand out an active call for the communication unit at the first network after the coupling of the on hold call to the wireless communication unit by establishing another call leg by receiving an other call from the wireless communication unit via the second communication network that is directed to an other handout number and responsive to receiving the other call, connecting the active call to the other call leg, as taught by Kung, to enable the mobile user to respond to calls directed to the mobile user's previous location while the mobile user is operating in a new network.

As to **claim 16**, Buttitta discloses everything as applied in claims 12-13; however he fails to disclose the on hold call is one of a plurality of on hold calls and the controller is operable to

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order the plurality of on hold calls according to a predetermined attribute of the respective on hold calls.

Kung also teaches a subscriber to a call waiting service can have multiple calls waiting on a call queue while involved in another call to enable the subscriber to have three or more incoming calls active simultaneously and switch between the different calls (column 30, lines 22-28), reading on claimed "the on hold call is one of a plurality of on hold calls." Kung also teaches a call manager 218 or the broadband residential gateway 300 may maintain a queue of waiting calls so that the call waiting the longest, reading on claimed "predetermined attribute of the respective on hold calls," may be answered in the ordered received (column 32, lines 31-34), reading on claimed "the controller is operable to order the plurality of on hold calls according to a predetermined attribute of the respective on hold calls."

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to require the communication network switch and the on hold call, disclosed by Buttitta, to be one of a plurality of on hold calls and the controller is operable to order the plurality of on hold calls according to a predetermined attribute of the respective on hold calls, as taught by Kung, to provide the user with the capability of choosing which call placed on hold to connect to first.

As to **claim 17**, Buttitta discloses everything as applied in claims 12-13 and the combination of Buttitta and Kung teaches everything as applied in claim 16; however, Buttitta fails to disclose to hand out an other hold call for the wireless communication unit at the first communication network by establishing an other call leg by forwarding, via the second communications network, the second on hold call to the wireless communication unit after the on hold call has been forwarded and connected by the wireless communication network.



Kung also teaches the BRG 300 monitors whether the subscriber wants to connect to an incoming call or a call waiting on the queue, reading on claimed "an other on hold call" and "second on hold call," at Step S750. In response to an indication from the subscriber that he is ready to be connected to a call on the queue, the BRG 300 sends a set up request message to the CM 218, the necessary resources are for the call are allocated, reading on claimed "to hand out an other on hold call for the wireless communication unit at the first communication network by establishing an other call leg," and the call is then connected in step S760, reading on claimed "forwarding, via the second communication network, the second on hold call to the wireless communication unit after the on hold call has been forwarded and connected by the wireless communication unit." The subscriber can switch from an active call to a waiting call at any time as in this manner. [Column 32, lines 19-26]

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to require the communication network switch, disclosed by Buttitta, to hand out an other hold call for the wireless communication unit at the first communication network by establishing an other call leg by forwarding, via the second communications network, the second on hold call to the wireless communication unit after the on hold call has been forwarded and connected by the wireless communication network, taught by Kung, to enable the wireless user to choose which calls placed on hold to activate and to communicate with the user on hold.

As to **claim 18**, Buttitta discloses everything as applied in claims 12-13 and the combination of Buttitta and Kung teaches everything as applied in claim 16; Buttitta also discloses, as stated previously, in order to obtain a call within the private system served by PBS 20 while CBS 13 is serving the MS:

10) The MS dials the call park feature access number, *reading on claimed "receiving an other call from the wireless communication unit via the second communication network that is directed to a second handover number"* over the cellular network.

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11) The cellular network routes the call park feature access number to the LEC. *Reading on claimed "other call leg."*

12) The LEC connects the parked party and the call from the MS.

13) The call with parked party is established with MS through cellular network.

However, Buttitta fails to disclose to hand out an other on hold call for the wireless communication unit at the first communication network after the on hold call has been connected to the call leg by establishing an other call leg and responsive to receiving the other call, connecting the other on hold call to the other call leg.

Kung also teaches the BRG 300 monitors whether the subscriber wants to connect to an incoming call or a call waiting on the queue, reading on claimed "an other on hold call," at Step S750. In response to an indication from the subscriber that he is ready to be connected to a call on the queue, the BRG 300 sends a set up request message to the CM 218, the necessary resources are for the call are allocated, reading on claimed "to hand out an other on hold call for the wireless communication unit at the first communication network after the on hold call has been connected to the call leg by establishing an other call leg," and the call is then connected in step S760, reading on claimed "responsive to receiving the other call, connecting the other on hold call to the other call leg." The subscriber can switch from an active call to a waiting call at any time as in this manner. [Column 32, lines 19-26]

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to require the communication network switch, disclosed by Buttitta, receiving an other call from the wireless communication unit via the second communication network, also disclosed by Buttitta, to hand out an other on hold call for the wireless communication unit at the first communication network after the on hold call has been connected to the call leg by establishing an other call leg and responsive to receiving the other call, connecting the other on hold call to the other call leg, as taught by Kung, to enable the mobile user to retrieve other on

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hold calls within the previous serving network if the current serving network could not support the mobile user communicating on multiple separate calls simultaneously.

As to **claim 27**, Buttitta discloses everything as applied in claims 25-26; however, he does not disclose handing out an active call for the wireless communication unit by establishing an other call leg by forwarding, via the second communications network, the active call for the wireless communication unit after the on hold call has been forwarded and responsive to the on hold call being connected by the wireless communication unit.

Kung also teaches if the subscriber chooses to answer the incoming call, reading on claimed "active call," and place the ongoing call on queue, the BRG 300 can communicate this information to the CM 218 and the resources for the incoming call can be allocated, reading on claimed "an other call leg," and that call connected to the subscriber while the on going call is no longer ongoing and placed on the call queue (column 31, lines 33-39), reading on claimed "handing out an active call for the wireless communication unit by establishing an other call leg by forwarding, via the second communications network, the active call for the wireless communication unit after the on hold call has been forwarded and responsive to the on hold call being connected by the wireless communication unit."

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to require the method, disclosed by Buttitta, to include the step of handing out an active call for the wireless communication unit by establishing an other call leg by forwarding, via the second communications network, the active call for the wireless communication unit after the on hold call has been forwarded and responsive to the on hold call being connected by the wireless communication unit, as taught by Kung, to enable the mobile user to respond to calls directed to the mobile user's previous location while the mobile user is operating in a new network.

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As to **claim 28**, Buttitta discloses everything as applied in claims 25-26 and also discloses, as stated previously, in order to obtain a call within the private system served by PBS 20 while CBS 13 is serving the MS:

10) The MS dials the call park feature access number; *reading on claimed "a second handout number" and "other call,"* over the cellular network.

11) The cellular network routes the call park feature access number to the LEC. *Reading on claimed "other call leg."*

12) The LEC connects the parked party and the call from the MS.

13) The call with parked party is established with MS through cellular network.

However, Buttitta fails to disclose to handing out an active call for the communication unit after the coupling of the on hold call to the wireless communication unit by establishing an other call leg by receiving an other call from the wireless communication unit via the second communication network that is directed to a second handout number and responsive to receiving the other call, connecting the active call to the other call leg.

Kung also teaches if the subscriber chooses to answer the incoming call, reading on claimed "active call," and place the ongoing call on queue, the BRG 300 can communicate this information to the CM 218 and the resources for the incoming call can be allocated, reading on claimed "an other call leg," and that call connected to the subscriber while the on going call is no longer ongoing and placed on the call queue (column 31, lines 33-39), reading on claimed "handing out an active call for the communication unit after the coupling of the on hold call to the wireless communication unit by establishing another call leg by receiving an other call from the wireless communication unit via the second communication network that is directed to a second handout number and responsive to receiving the other call, connecting the active call to the other call leg."

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to require method, disclosed by Buttitta, second handout number and other call, also

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disclosed by Buttitta, the step of handing out an active call for the communication unit after the coupling of the on hold call to the wireless communication unit by establishing another call leg by receiving an other call from the wireless communication unit via the second communication network that is directed to a second handout number and responsive to receiving the other call, connecting the active call to the other call leg, as taught by Kung, to enable the mobile user to respond to calls directed to the mobile user's previous location while the mobile user is operating in a new network.

As to **claim 29**, Buttitta discloses everything as applied in claims 25-26; however he fails to disclose the on hold call is one of a plurality of on hold calls and the method further comprises ordering the plurality of on hold calls according to a predetermined attribute of the respective on hold calls.

Kung also teaches a subscriber to a call waiting service can have multiple calls waiting on a call queue while involved in another call to enable the subscriber to have three or more incoming calls active simultaneously and switch between the different calls (column 30, lines 22-28), reading on claimed "the on hold call is one of a plurality of on hold calls." Kung also teaches a call manager 218 or the broadband residential gateway 300 may maintain a queue of waiting calls so that the call waiting the longest, reading on claimed "predetermined attribute of the respective on hold calls," may be answered in the ordered received (column 32, lines 31-34), reading on claimed "ordering the plurality of on hold calls according to a predetermined attribute of the respective on hold calls."

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to require the method, disclosed by Buttitta, that the on hold call is one of a plurality of on hold calls and step of ordering the plurality of on hold calls according to a predetermined

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attribute of the respective on hold calls, as taught by Kung, to provide the user with the capability of choosing which call placed on hold to connect to first.

As to **claim 30**, Buttitta discloses everything as applied in claims 25-26 and the combination of Buttitta and Kung teaches everything as applied in claim 29; however, Buttitta fails to disclose handing out a second on hold call for the communication unit at the first communication network by establishing an other call leg by forwarding, via the second communications network, the second on hold call to the wireless communication unit after the on hold call has been forwarded and connected by the wireless communication network.

Kung also teaches the BRG 300 monitors whether the subscriber wants to connect to an incoming call or a call waiting on the queue, reading on claimed "a second on hold call" at Step S750. In response to an indication from the subscriber that he is ready to be connected to a call on the queue, the BRG 300 sends a set up request message to the CM 218, the necessary resources for the call are allocated, reading on claimed "handing out a second on hold call for the wireless communication unit at the first communication network by establishing an other call leg," and the call is then connected in step S760, reading on claimed "forwarding, via the second communication network, the second on hold call to the wireless communication unit after the on hold call has been forwarded and connected by the wireless communication unit." The subscriber can switch from an active call to a waiting call at any time as in this manner.

[Column 32, lines 19-26]

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to require the method, disclosed by Buttitta, the step of handing out a second on hold call for the wireless communication unit at the first communication network by establishing an other call leg by forwarding, via the second communications network, the second on hold call to the wireless communication unit after the on hold call has been forwarded and connected by the

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wireless communication network, taught by Kung, to enable the wireless user to choose which calls placed on hold to activate and to communicate with the user on hold.

As to claim 31, Buttitta discloses everything as applied in claims 25-26 and the combination of Buttitta and Kung teaches everything as applied in claim 29; Buttitta also discloses, as stated previously, in order to obtain a call within the private system served by PBS 20 while CBS 13 is serving the MS:

10) The MS dials the call park feature access number, *reading on claimed "receiving an other call from the wireless communication unit via the second communication network that is directed to a second handover number"* over the cellular network.

11) The cellular network routes the call park feature access number to the LEC. *Reading on claimed "other call leg."*

12) The LEC connects the parked party and the call from the MS.

13) The call with parked party is established with MS through cellular network.

However, Buttitta fails to disclose handing out a second on hold call for the communication unit after the on hold call has been connected to the call leg and thus to the wireless communication unit by establishing an other call leg and responsive to receiving the other call, connecting the other on hold call to the other call leg.

Kung also teaches the BRG 300 monitors whether the subscriber wants to connect to an incoming call or a call waiting on the queue, *reading on claimed "a second on hold call,"* at Step S750. In response to an indication from the subscriber that he is ready to be connected to a call on the queue, the BRG 300 sends a set up request message to the CM 218, the necessary resources for the call are allocated, *reading on claimed "handing out a second on hold call for the wireless communication unit after the on hold call has been connected to the call leg and thus the wireless communication unit by establishing an other call leg,"* and the call is then connected in step S760, *reading on claimed "responsive to receiving the other call,*

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connecting the other on hold call to the other call leg." The subscriber can switch from an active call to a waiting call at any time as in this manner. [Column 32, lines 19-26]

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to require the method, disclosed by Buttitta, receiving an other call from the wireless communication unit via the second communication network, also disclosed by Buttitta, the step of handing out an other on hold call for the wireless communication unit after the on hold call has been connected to the call leg and thus to the wireless communication unit by establishing an other call leg and responsive to receiving the other call, connecting the other on hold call to the other call leg, as taught by Kung, to enable the mobile user to retrieve other on hold calls within the previous serving network if the current serving network could not support the mobile user communicating on multiple separate calls simultaneously.

5. **Claims 19 and 32** rejected under 35 U.S.C. 103(a) as being unpatentable over Buttitta as applied in claims 12-13 and 25-26 above, and further in view of well known prior art (MPEP 2144.03).

As to **claim 19**, Buttitta discloses everything as applied in claims 12-13 and also discloses a mobile station can search for a private base station's control channel transmission using a number of techniques, including: a mobile station user manually directing the mobile station to search for the private base station or the mobile station, upon finding the control channel of the private base station, automatically goes through a series of controlled procedures to obtain registration with the private base station, both methods reading on claimed "determining that a hand in of the wireless communication unit from the second communication network to the first communication network is desired." [Column 5, lines 3-9] Once a mobile station, for example, station 10, obtains a successful registration with the private base station



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20, the private base station 20 makes a modem connection to the private base station visiting location register 30 to update the mobile station's temporary listed directory number (TLDN). The temporary listed directory number in this case is the private base station's landline number (LLN). Hence, when an incoming call is directed to a particular mobile station, information including the temporary listed directory number for this mobile station is accessed from the private base station visiting locating register 30 through the home location register 15 or the visiting location register 16 and the call is routed to the private base station's LLN, reading on claimed "call leg." The private base station 20 detects the ring for an incoming call and sends an alerting signal or page to the registered mobile station. Following the mobile station's response to the alerting signal, private base station 20 establishes a traffic channel, reading on claimed "active call leg," for the mobile station and generates an off-hook condition to connect the incoming call through the private base station to the mobile station, reading on claimed "establishes an active call leg with the wireless communication unit in the first communication network and connects the call leg to the active call leg." [column 5, lines 10-32]

However, Buttitta fails to disclose the mobile user places an active call on hold in the second communications network and connects the on hold call to the wireless communication unit via the first communication network.

The Examiner takes Official notice that it was old and well known in the art at the time of invention to place a call on hold in a cellular system and, in light of Buttitta, to transfer the on hold call to network in which the mobile station roams to.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to require the communication network switch and switching of the on hold call, disclosed by Buttitta, determining that a hand in of the wireless communication unit from the second communication network to the first communication network is desired, establishes an

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active call leg with the wireless communication in the first communication network and connects the call leg to the active call leg, also disclosed by Buttitta, and connecting the on hold call to the wireless communication unit via the first communication network, in view of well known prior art, to enable the wireless device to return to the private network after roaming to the public cellular network without dropping the call in the public cellular network.

As to **claim 32**, Buttitta discloses everything as applied in claims 25-26 and also discloses a mobile station can search for a private base station's control channel transmission using a number of techniques, including: a mobile station user manually directing the mobile station to search for the private base station or the mobile station, upon finding the control channel of the private base station, automatically goes through a series of controlled procedures to obtain registration with the private base station, both methods reading on claimed "determining that a hand in of the wireless communication unit from the second communication network to the first communication network is desired." [Column 5, lines 3-9] Once a mobile station, for example, station 10, obtains a successful registration with the private base station 20, the private base station 20 makes a modem connection to the private base station visiting location register 30 to update the mobile station's temporary listed directory number (TLDN). The temporary listed directory number in this case is the private base station's landline number (LLN). Hence, when an incoming call is directed to a particular mobile station, information including the temporary listed directory number for this mobile station is accessed from the private base station visiting locating register 30 through the home location register 15 or the visiting location register 16 and the call is routed to the private base station's LLN, reading on claimed "call leg." It is also understood that the temporary listed directory number may be stored in either the home location register 15 or the visiting location register 16, and the mobile switching center 12 then accesses this TLDN from this register. The private base station 20

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detects the ring for an incoming call and sends an alerting signal or page to the registered mobile station. Following the mobile station's response to the alerting signal, private base station 20 establishes a traffic channel, reading on claimed "active call leg," for the mobile station and generates an off-hook condition to connect the incoming call through the private base station to the mobile station, reading on claimed "establishing, responsive to the determining that a hand in is desired, an active call leg with the wireless communication unit in the first communication network: and connecting the call leg to the active call leg." [Column 5, lines 10-32]

However, Buttitta fails to disclose the mobile user places an active call on hold in the second communications network and connects the on hold call to the wireless communication unit via the first communication network.

The Examiner takes Official notice that it was old and well known in the art at the time of invention to place a call on hold in a cellular system and, in light of Buttitta, to transfer the on hold call to network in which the mobile station roams to.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to require the method, disclosed by Buttitta, determining that a hand in of the wireless communication unit from the second communication network to the first communication network is desired, establishing, responsive to the determining that a hand in is desired, an active call leg with the wireless communication in the first communication network: and connecting the call leg to the active call leg, also disclosed by Buttitta, the step of connecting the on hold call at the second communication network to the wireless communication unit via the first communication network, in view of well known prior art, to enable the wireless device to return to the private network after roaming to the public cellular network without dropping the call in the public cellular network.

6. **Claims 20 and 33** are rejected under 35 U.S.C. 103(a) as being unpatentable over Buttitta as applied to claims 12-13 and 25-26 above in view of well known prior art (MPEP 2144.03) as applied in claims 19 and 32 above, and further in view of Kung *et al* (U.S. 6,633,635).

As to **claim 20**, Buttitta discloses everything as applied in claims 12-13 and well known prior art teaches everything as applied in claim 19; however, neither disclose the switching function receives a signal from the wireless communication unit directing that the active call leg be placed on hold.

In an analogous art, Kung teaches that when a subscriber is engaged in an ongoing call with a party who is either on the same network as the subscriber or off the network, the BRG assigned to the subscriber can receive packets for an incoming call originating from a party either on or off the same network as the subscriber (column 30, lines 35-40). He further teaches the BRG 300 notifies the subscriber of the incoming call (column 30, lines 66-67) and if the subscriber chooses to answer the incoming call, reading on claimed "receives a signal from the wireless communication unit," and place the ongoing call on the queue, reading on claimed "directing that the active call be placed on hold," the BRG 300 can communicate this information to the CM 218 and the resources for the incoming call can be allocated and that call connected to the subscriber in step S760, while the ongoing-call is no longer ongoing and placed on the call queue (column 31, lines 33-39).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to require the communications network switch and on hold call, disclosed by Buttitta, determining that a hand in of the wireless communication unit from the second communication network to the first communication network is desired, establishes an active call leg with the

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wireless communication in the first communication network and connects the call leg to the active call leg, also disclosed by Buttitta, and connecting the on hold call to the wireless communication unit via the first communication network, in view of well known prior art, and the control with the switching function receives a signal from the wireless communication unit directing that the active call be placed on hold, as taught by Kung, to enable the mobile device to answer an incoming call from the private system.

As to **claim 33**, Buttitta discloses everything as applied in claims 25-26 and well known prior art teaches everything as applied in claim 32; however, neither disclose receiving a signal from the wireless communication unit directing that the active call leg be placed on hold.

In an analogous art, Kung teaches that when a subscriber is engaged in an ongoing call with a party who is either on the same network as the subscriber or off the network, the BRG assigned to the subscriber can receive packets for an incoming call originating from a party either on or off the same network as the subscriber (column 30, lines 35-40). He further teaches the BRG 300 notifies the subscriber of the incoming call (column 30, lines 66-67) and if the subscriber chooses to answer the incoming call, reading on claimed "receives a signal from the wireless communication unit," and place the ongoing call on the queue, reading on claimed "directing that the active call be placed on hold," the BRG 300 can communicate this information to the CM 218 and the resources for the incoming call can be allocated and that call connected to the subscriber in step S760, while the ongoing-call is no longer ongoing and placed on the call queue (column 31, lines 33-39).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to require the method, disclosed by Buttitta, determining that a hand in of the wireless communication unit from the second communication network to the first communication network is desired, establishing, responsive to the determining that a hand in is desired, an active call

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leg with the wireless communication in the first communication network; and connecting the call leg to the active call leg, also disclosed by Buttitta, connecting the on hold call at the second communication network to the wireless communication unit via the first communication network, in view of well known prior art, the step of receiving a signal from the wireless communication unit directing that the active call be placed on hold, as taught by Kung, to enable the mobile device to answer an incoming call from the private system.

7. **Claim 21** is rejected under 35 U.S.C. 103(a) as being unpatentable over Buttitta *et al* (U.S. 5,913,166) in view of well known prior art (MPEP 2144.03) and in further view of Kung *et al* (U.S. 6,633,635).

As to **claim 21**, Buttitta teaches a mobile station (MS) 10, reading on claimed "wireless communication unit," a public/cellular base station (CBS) 13, reading on claimed "second communication network," and a private base station (PBS) 20, reading on claimed "first communication network," in Figure 1 (column 2, lines 66-67; column 3, lines 1-8). As shown in Figure 1, CBS 13 and PBS 20 are connected via PSTN 14, LEC 11, and MSC 12, reading on claimed "a network switch and a wireless communication unit operable in a loosely coupled communication network comprising a first communication network and a second communication network." Buttitta also teaches the private base station 20 and the local exchange carrier switch 11 cooperatively switch a call in progress from an existing wireless communication path established between private base station 20 and the mobile station 10 to a newly created wireless communication path established between public base station 13 in the cellular system and the mobile station 10. The private base station 20 is configurable either to permit the user of mobile station 10, while communicating with a remote party, through this base station 20, to manually initiate the hand-off or to have base station 20 automatically execute the hand-off

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when mobile station 10 is moved to the fringe of the coverage area provided by private base station 20. [Column 3, lines 38-51] Buttitta also teaches a mobile station can search for a private base station's control channel transmission using a number of techniques, including: a mobile station user manually directing the mobile station to search for the private base station or the mobile station, upon finding the control channel of the private base station, automatically goes through a series of controlled procedures to obtain registration with the private base station.

However, Buttitta fails to teach determining, after an absence, that the wireless communication unit is again present in the first communication network.

The Examiner takes Official notice that it was old and well known at the time of invention for a mobile device to roam in and out of differing mobile radio systems operating on differing wireless protocols and, in view of Buttitta, to re-register with each system each time the mobile user re-enters each radio system.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to develop a method to be implemented between a network switch and a wireless communication unit operable in a loosely coupled network comprising a first communication network and a second communication network, as taught by Buttitta, and determining, after an absence, that the wireless communication unit is again present in the first communication network, as taught by well known prior art, in order to re-register the mobile device in the private system to allow the mobile device to receive calls within the private system.

However, neither teach exchanging messages between the wireless communication unit and the network switch to provide a listing of call appearance information for calls corresponding to the wireless communication unit.

In an analogous art, Kung teaches a subscriber to a call waiting service can have multiple calls waiting on a call queue while involved in another call to enable the subscriber to

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have three or more incoming calls active simultaneously and switch between the different calls (column 30, lines 22-28), reading on claimed "calls corresponding to the wireless communication unit." Kung also teaches a call manager 218, reading on claimed "network switch," or the broadband residential gateway 300, reading on claimed "network switch," may maintain a queue of waiting calls so that the call waiting the longest may be answered in the ordered received (column 32, lines 31-34). Kung also teaches a visual list may be provided to the subscriber, reading on claimed "exchanging messages between the wireless communication unit and the network switch," (column 32, lines 38-39) and that data such as waiting time and the type of service of the waiting call, both reading on claimed "to provide a listing of call appearance information for calls corresponding to the wireless communication unit," (column 32, lines 42-44).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to develop a method of synchronizing call appearance information between a network switch and a wireless communication unit operable in a loosely coupled network comprising a first communication network and a second communication network, as taught by Buttitta, determining, after an absence, that the wireless communication unit is again present in the first communication network, and exchanging messages between the wireless communication unit and the network switch to provide a listing of call appearance information for calls corresponding to the wireless communication unit, as taught by Kung, to enable the mobile user to visually see all of the calls either active or on hold the mobile station is communicating with.

8. **Claims 22-23** are rejected under 35 U.S.C. 103(a) as being unpatentable over Buttitta, well known prior art, and Kung as applied to claim 21 above, and in view of Handley, *et al* (RFC



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2543 – SIP: Session Initiation Protocol) and in further view of Pirttimaa *et al* (U.S. 2003/0154400 A1).

As to **claim 22**, Buttitta, well known prior art, and Kung teach everything as applied in claim 21; however, neither teach the wireless communication unit is present comprises exchanging a session initiation protocol (SIP) INVITE message between the wireless communication unit and the network switch, the SIP INVITE message further comprising a presence state.

In an analogous art, Handley teaches when a user agent client desires to initiate a call, it formulates an INVITE request (section 11.1, page 96), reading on claimed “SIP INVITE message.” He also teaches the INVITE message is used to initiate a two-party call between IP phones (section 16.3, page 123), reading on claimed “the wireless communication unit is present comprises exchanging a session initiation protocol SIP INVITE message between the wireless communication unit and the network switch.”

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to require the method, taught by Buttitta, well known prior art, and Kung, to determine that the wireless communication unit is present comprises exchanging a session initiation protocol SIP INVITE message between the wireless communication unit and the network switch, as taught by Handley, to enable the mobile user to initiate a telephone call over an IP network.

Buttitta, well known prior art, and Kung teach everything as applied in claim 21 and Handley teaches everything as applied above; however, neither teach the SIP INVITE message further comprising a presence state.

In an analogous art, Pirttimaa teaches that when a SIP request message, e.g. an INVITE message is send from the UE1 40 to the P-CSCF 30 (step 1), the P-CSCF 30 performs an address comparison (step 2) in which an IP address or at least a part (e.g. a unique prefix) of

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the IP address, which is derived from a received IP datagram conveying the SIP message (if IPsec is used) or derived from a database (if SIPsec is used), is compared to an IP address indicated in a header, e.g. contact header or any other header portion, of the SIP message. As an example, the contact header of the SIP message is used to indicate the point of presence, reading on claimed "presence state," for the subscriber, i.e. the IP address of the UE1 40 (page 3, paragraph 42) reading on claimed "the SIP INVITE message further comprising a presence state."

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to require the method, taught by Buttitta, well known prior art, and Kung, to determine that the wireless communication unit is present comprises exchanging a session initiation protocol SIP INVITE message between the wireless communication unit and the network switch, taught by Handley, and the SIP INVITE message further comprising a presence state, as taught by Pirttimaa, to establish the temporary point of contact for the mobile device when it is being registered.

As to **claim 23**, Buttitta, well known prior art, and Kung teach everything as applied in claim 21 and Handley and Pirttimaa teach everything as applied in claim 22; however, Buttitta, well known prior art, and Kung fail to teach exchanging messages further comprises exchanging a SIP OK message including a portion of the call appearance information, the SIP OK message directed to the wireless communication unit.

Handley also teaches a 200 OK message, reading on claimed "SIP OK message," is used to indicate that the request has succeeded (section 7.2.1, page 76). Handley also teaches the format of the 200 OK message for a two party call indicating the user sending the OK message in the From field, the receiver in the To field, and the contact in the Contact field (section 16.3, page 123), reading on claimed "exchanging messages further comprises

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exchanging a SIP OK message including a portion of the listing of call appearance information, the SIP OK message directed to the wireless communication unit.”

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to require the method, taught by Buttitta, well known prior art, and Kung, to determine that the wireless communication unit is present comprises exchanging a session initiation protocol SIP INVITE message between the wireless communication unit and the network switch, taught by Handley, the SIP INVITE message further comprising a presence state, taught by Pirttimaa, and exchanging messages further comprises exchanging a SIP OK message including a portion of the listing of call appearance information, the SIP OK message directed to the wireless communication unit, also taught by Handley, to inform the mobile device the party they were trying to reach has been connected to the call.

9. **Claim 24** is rejected under 35 U.S.C. 103(a) as being unpatentable over Buttitta, well known prior art, and Kung as applied to claim 21 above, in view of Handley and Pirttimaa as applied in claim 22 above, and in further view of Mahy (IEFT Internet Draft – Using SIP for Peer-to-Peer Third Party Call Control).

As to **claim 24**, Buttitta, well known prior art, and Kung teach everything as applied in claim 21 and Handley and Pirttimaa teach everything as applied in claim 22; however, neither of them teach exchanging messages further comprises exchanging a plurality of SIP NOTIFY messages, the plurality of SIP NOTIFY messages collectively including the listing of call appearance information, the call appearance information further comprising a call identifier.

In an analogous art, Mahy teaches that when a dialer application asks the phone to place a call (page 2, F8) then after the phone places the call, the phone sends a NOTIFY message (page 2, F9), reading on claimed “SIP NOTIFY messages.” Mahy also teaches the

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structure of the message that contains a Call-ID field (page 3, F9), reading on claimed "call identifier and call appearance information." Mahy further teaches the NOTIFY message can be used to drop out of the call (page 4, F40), reading on claimed "exchanging messages further comprises exchanging a plurality of SIP NOTIFY messages, the plurality of SIP NOTIFY messages collectively including the listing of call appearance information, the call appearance information further comprising a call identifier."

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to require the method, taught by Buttitta, well known prior art, and Kung, to determine that the wireless communication unit is present comprises exchanging a session initiation protocol SIP INVITE message between the wireless communication unit and the network switch, taught by Handley, the SIP INVITE message further comprising a presence state, as taught by Pirttimaa, and exchanging messages further comprises exchanging a plurality of SIP NOTIFY messages, the plurality of SIP NOTIFY messages collectively including the listing of call appearance information, the call appearance information further comprising a call identifier, as taught by Mahy, to enable the mobile device to provide updated information according its status to the system.

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***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Olivia Marsh whose telephone number is 703-308-4563. The examiner can normally be reached on 8am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marsha Banks-Harold can be reached on 703-305-4379. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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